Keysight PNA Series Network Analyzers

Applies to:
N5221B, N5222B, N5224B, N5225B, N5227B,
N5231B, N5232B, N5234B, N5235B, N5239B,
N5241B, N5242B, N5244B, N5245B, N5247B, N5249B,
N5264B

KEYSIGHT

Table of Contents
(Production releases are shown in bold)

A.19.80.06 Version Information

Compilation Date:	20 Oct 2025
Operating System:	Windows 11 and Windows 10
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.19.80.06.exe

Enhancements

- State Converter
- Flatten Slope in TDR
- Added Time Span Extension Mode in TDR
- Group Delay per segment
- Global Source – Add support for E5080B, M980xA, P50xxA/B
- Added new SMU support - B2912C
- Added "External" tab for receiver traces, updated measure softkey
- Added Save and Recall features in Preferences dialog
- Differential IQ enhancements
  - o Absolute phase checkbox for supported hardware
  - o Nominal traces
  - o Normalize phase of receiver traces
- External Source
  - o New option to bypass Preset on external source
- Create DUT Model in Modulation Distortion Measurement Type
- Added .xnp file in Active Hot Parameters
- Added Refresh Cal in Smart Cal
- SMC LO power parameters with receiver leveling capability (when LO is an internal port)
- Pulse off warning (with user control) during Cal All, Smart Cal, and Source Power Cal
- Macro softkeys now occupy the top positions
- Added capability to create custom fixture block labels
- Enhanced Response Correction for Noise Figure

Issues Resolved

- Active Hot Parameters – Fix copy channel to include calset
- Calibration – Fix appending to calset with source power correction
- Calibration – SCPI now returns error with bad calkit name
- Calibration – Avoid unnecessary unknown delay estimates with waveguide calibrations
- Calibration – Fix recall of ecal calibration config
- Calibration – During import of power calibration, fix attenuator verification
- Calibration – Add better diagnostics when performing calibrations via SCPI
- Correction – On systems that support switched gain, add switch gain to ideal calsets generated by SENS:CORR:CSET:CRE:DEF

- Correction – Status bar correction menu now affects entire channel, rather than just active measurement
- Calset Properties – Add minimum and maximum power display when using segment sweep with independent power
- Differential I/Q – Add better diagnostic when selecting external source without phase control
- Differential I/Q – Fix source power correction status indicator
- Display – Improve readability of annotations on 4K displays
- E-TDR – Do not show the segment table automatically
- External Device – Fix issue when removing DC device that would cause more traces to be removed
- Gain Compression – Correction type is now included in copy channel of GCA/GCX
- Global Source – Added global source to the active port status toolbar
- Leaky Calibration – Fix recall of files with inconsistent line endings
- Leaky Calibration – Fix recall of leaky calibration config file
- Modulation Distortion – Allow use of input port greater than 3 on M983xA
- Modulation Distortion - On M983xA, fix the LO drive port combo box on 2-port VNA
- Multiport – Significantly improve Preset speed when using large port count systems
- Noise Figure – Fix choice of QSOLT calibration when input port is greater than the output port
- Noise Figure – Fix noise tuner control in vector noise calibration on M980X PXI VNA
- Noise Figure Uncertainty Calculator – Fix error "ENR not found" when using USB noise source
- Noise Figure – Correction type is now included in copy channel of NFA/NFX
- N5232B/N5235B – Fix unusual steps at low frequency measurements
- Path Configuration – Fix setting high power mode at low frequency on PNA-X
- Power Sensor – Significant reduction in time to upload frequency loss table for PMAR over SCPI
- Save Data – New option in SCPI to save SNP data as Balanced or Normal to match GUI capability
- Save Data – When saving data files, firmware now remembers most recently used settings
- Scalar Mixer Converter – Correction type is now included in copy channel of SMC
- SCPI – Increase number of measurements for SCPI to 10000
- Segments – Fix recall of receiver gain per segment settings
- Spectrum Analyzer – Fix copy of source correction settings when using Copy Channel
- Spectrum Analyzer - Fix marker to SA when running on PXI VNA
- Spectrum Analyzer - Fix fixture deembedding from ideal calsets
- Swept IMD – Added new SCPI commands for setting the F1 and F2 sources
- Swept IMD – Correction type is now included in copy channel of IMD/IMDX
- Swept IMD - Fix slow sweep speed when using dwell on PNA-X Pro
- True Mode Stimulus – Fix power setting when running without calibration
- VNA Uncertainty – Fix import of METAS SDATCV files

A.19.55.14 Version Information

Compilation Date:	11 Sep 2025
Operating System:	Windows 11 and Windows 10
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.19.55.14.exe

Enhancements

- [PNA-X Pro] Support for NA520xA PNA-X Pro
- [PNA-X Pro] Software options:
  - S93025B – Basic pulse -RF measurements
  - S93026B – Advanced pulse-RF measurements
  - S93070xB – Modulation distortion
  - S93090xB – Spectrum analysis
  - S93118B – Fast CW measurements
  - S93072B – Internal 6G arbitrary waveform generation
  - S93050B – IQ data bandwidth up to 1.5 GHz
  - S93051B – IQ data bandwidth up to 4 GHz
  - S93027B – Mechanical noise tuner control
- [PNA-X Pro] Multi-site parallel measurement support for NA520xA PNA-X Pro
- [PXI] Wideband Active Load Pull support for PXI
- New Grid Setup Softkey for display options
- Added up/down buttons to numeric entry

Issues Resolved

- Calibration - Fix error requiring support license for power table calibrations
- Calibration - Fix errors when performing attenuator calibrations without power cal
- Calibration - Return to active sheet when calibration finishes
- Calibration - Optimized power calibration with power table by avoiding 2D calibration when sources are linear.
- Calibration - Always store source power correction to calset if requested
- Calibration - Fix adapter removal error when using power table through GUI
- Calibration - Fix error seen when power sensor fails to zero
- Calibration - Stop screen flashing during ECal orientation
- Differential I/Q - Fix error with fixturing when calset has LO power calibrations
- Fixturing - Fix status bar not showing "Sim" when fixture loaded from a .topo file
- Help - Fix broken links
- Hybrid Source - Fix error seen when source is not used in Application Channels
- Interface Control - Fix errors seen when unnecessary whitespace is added to commands
- [PNA] Intermodulation Distortion - Fix error seen when using f2 as source on 2 port PNA-Xs
- Misc - Remove unsupported Code Emulation feature
- Misc - Fix freeze when attempting to use Frequency Offset Mode without a license

- Modulation Distortion - Fix cut off displays in "RF Path" and "Measure" tabs
- Multi-Source - Fix multi-source support for Differential I/Q
- Multi-Source - Do not reset existing multi-sources when activating a new device
- Multi-Source - Fix error seen when deactivating a multi-source
- Noise Figure - Suppress data quality errors when doing calibrations on the simulator
- Noise Figure - Rename support contract description for External Noise Amplifier to align with Help documentation
- [PNA] Noise Figure - Add missing SCPI command for "Cal Receiver at Low Frequencies Only" calibration option
- [PNA] Noise Figure - Improvements to UI when using U7229x amplifiers with broadband systems
- Pulse - Improved UI interactions
- Pulse - Improved accuracy in some narrowband cases
- [PNA] SMC - Fixed incorrectly grayed out button when Port 1 is the LO
- Spectrum Analyzer - Various fixes and improvements

A.19.50.29 Version Information

Compilation Date:	21 Aug 2025
Operating System:	Windows 11
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.19.50.29.exe

A.19.50.29 is the PNA-X Pro Production Release.
All shipping NA520xA PNA-X Pros will contain this version until the next Production Release.

[PNA-X Pro] Supported software options:

- S93007B Automatic fixture removal
- S93010B Time domain analysis
- S93029B Noise figure measurements with vector correction
- S93080B Frequency offset measurements
- S93082B Scalar mixer/converter measurements
- S93083B Vector and scalar mixer/converter measurements + phase (no VMC)
- S93084B Embedded-LO capability
- S93086B Gain-compression measurements
- S93087B Intermodulation distortion measurements
- S93088B Source phase control
- S93089B Differential and I/Q device measurements
- S93460B True-mode stimulus
- S94050B Vector network analyze (VNA) simulator – standard
- S94051B Vector network analyze (VNA) simulator – advanced

A.19.15.25 Version Information

Compilation Date:	26 Jun 2025
Operating System:	Windows 11 and Windows 10
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.19.15.25.exe

A.19.15.25 is the PNA-X, PNA, PNA-L Production Release.

All shipping N52xxB PNAs will contain this version until the next Production Release.

Note: This version is comparable to A.19.10.09 with the necessary drivers for Windows 11. This version does not include the enhancements listed under versions A.19.30.04, A.19.30.16, or A.19.30.21. A future release will contain the superset of features.

A.19.30.21 Version Information

Compilation Date:	03 Jul 2025
Operating System:	Windows 10
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.19.30.21.exe

Enhancements

- ECal Data Save/Write
- Marker Off for E5071 Emulation Mode
- Enhanced TDR - De-embedding Length UI

Issues Resolved

- AFR - Fix to apply averaging setting
- Cal All - Fix error at extra power cal step for external source
- Cal All - Fix LO calibration error at Split port cal with extra power cal step
- Cal All - Fix error when go back to a previous cal step
- External Source - Fix error when multi-channel source is disabled
- External Source - Disabled unsupported Auto Range checkbox for multi-channel source
- IMDX - Fix Split port cal error on Cal All
- Misc - Fix Softkey entry box behavior at the end of sweep
- Noise Figure - Fix error at Noise Source softkey
- Noise Figure - Improve recall state speed when CalPod is disconnected
- Save Data - Fix data when equation editor is enabled
- Save Data - Fix data for Full-N correction with Scope Auto
- Save Data - Fix data for time domain trace with disabled gating state
- (P50xxB/M, P937xB) Fix intermittent FPGA update error with Thunderbolt connection

A.19.30.16 Version Information

Compilation Date:	28 May 2025
Operating System:	Windows 10
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.19.30.16.exe

Enhancements

- Multichannel External Source
- (N52xxB) Improve IF Phase Cal in mmWave

Issues Resolved

- Calibration – Fix error message when power meter is not found
- External Device – Fix multiple DC Meter control
- External Device – Fix error when disconnecting external source
- Receiver Leveling – Fix leveling result at the first sweep of zero iteration mode
- Differential IQ – Fix CalAll error at 2 internal sources and 2 external sources
- Enhanced TDR – Fix error at Preset in Advanced mode
- Modulation Distortion – Fix minimum IQ record size for PSG
- Noise Figure – Fix faulty correction for reverse frequency sweeps
- TMSA – Fix sweep slowdown after toggling TMSA state
- (N52xxB) mmWave – Fix Installation Cal errors on mmWave config dialog
- (N52xxB) mmWave – Fix Source Power Cal with PMAX table
- (N52xxB) Wideband Active Load Pull – Fix file save for equation editor traces
- (M983xA) Fix external source setting when upconverter is disabled
- (N52xxB, E508x) Update Pathwave Calibration Advisor version

A.19.30.04 Version Information

Compilation Date:	13 Mar 2025
Operating System:	Windows 10
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.19.30.04.exe

Enhancements

- Added External Noise Amplifier support
- Add Rectangular Filter Selection for fast IF Bandwidths (GUI and SCPI)

Issues Resolved

- Banded (Broadband Combiner) – Fix various Broadband Combiner Calibration issues
- Banded (Direct Connection) – Fix application of 2D power calibrations
- Broadband (N5290/1A) – Fix low output source power
- Calibration – Add adapter De-Embed to Smart Cal using PMAX table
- Calibration – In Unguided Calibration, fix incorrect number of steps when using adapter removal
- Calsets – Fix CSET:PROP queries for calsets with incomplete information
- Differential I/Q – Fix error in fixturing when using a split calibration calset
- Differential I/Q – Fix correction not applied in DIQ channels
- Differential I/Q – Fix errors on PXI systems
- Differential I/Q – Fix error when recalling state with external sources, LFE, or XSB on an instrument without those sources
- Differential I/Q – Allow SCPI commands for TOLerance and ITERations to work if S93089B installed but not S93088B
- Fixturing: Allow files modifies to work in embed mode in addition to deembed mode
- Misc – Fix large log files generated by Pathwave Calibration Advisor
- Misc – Fix Active Port Status display in Status Bar
- Misc – Change Fixturing Status Bar display from "Sim" to "Fix"
- Misc – Fix format when using MMEM:STOR with SNP files
- Modulation Distortion – Fix intermittent issue where previous iteration of MOD Source Distortion Cal has a lower DEVM than the final iteration
- Modulation Distortion – Fix MOD Source Distortion Cal for 13GHz wide waveforms with DDS source
- Modulation Distortion – Fix issue saving MDX files on simulator
- Modulation Distortion – Fix trace update issue on simulator
- Noise Figure – Fix noise parameter data not saved with file type = "S2P Noise Parameters"
- Noise Figure – Improve setup dialog when using broadband systems with external amplifiers
- Noise Figure – Fix startup issues when Focus tuner software is installed
- Noise Figure – Fix source unleveled error when using NFX with source ports coupled
- Point Sweep – Fix point sweep with a single point
- SMU – Fix error when using SYST:CONF:EDEV:DC:LIM:CURR command
- Spectrum Analyzer – Fix incorrect min/max values for sources (SENS:SA:SOUR:FREQ:CW)

A.19.10.09 Version Information

Compilation Date:	30 Jan 2025
Operating System:	Windows 10
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.19.10.09.exe

Issues Resolved

- Cal All – Fix issue with IMDX LO calibrations in Cal All
- Calset Viewer – Fix saving error term to a file
- Differential I/Q – Fix phase processing error
- Modulation Distortion – Fix intermittent problem with distortion correction where EVM results could not be achieved
- N5290A – Resolve unnecessary power clipping on N5290A/N5291A system
- Power Sensor – Support power sensor loss tables above 200 GHz
- TDR – Fix setting DUT length to 12.5 ns

A.19.10.06 Version Information

Compilation Date:	19 Dec 2024
Operating System:	Windows 10
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.19.10.06.exe

Enhancements

- Misc – Add rectangular IFBW filters (SCPI only)

Issues Resolved

- AFR – Fix SNP formatting issue when EU format selected
- Calibration – Fix error when doing Response Cal on receiver measurements
- External Source - Fix various issues with M819xx when used as External Device
- Misc – Fix arrow keys on Source Attenuator entry in Power and Attenuators dialog
- Modulation Distortion - Improve correction speed when S-Parameter calibration enabled
- Modulation Distortion - Perform Low Side LO phase calibration when needed
- Modulation Distortion - Force Wide IF Filter use if IF setting is Auto and tone spacing is > 2 MHz
- N529xA: Fix IF Phase Cal
- Noise Figure - Improve compression messages at high frequencies (>26.G) for N5245/7x, options 029 and E29
- Noise Figure - N524xx: Fix calibration issue when using macro feature
- Preferences - Add SCPI for preference: Power off on Preset
- SMU – Fix various UI issues when configuring N67XX SMU as External Device
- Spectrum Analyzer - Fix marker location in coherent modes
- Spectrum Analyzer - Fix phase display in coherent modes
- Wideband Active Load Pull - Use power limits defined in "Offsets and Limits" dialog·

A.19.10.04 Version Information

Compilation Date:	21 Nov 2024
Operating System:	Windows 10
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.19.10.04.exe

Enhancements

- Added Import Power Cal and Source PMax Table Cal in Power Cal Setting
- Leaky Calibration
- Updated Save Data As dialog
- Updated Power Cal Settings dialog
- Added Burst Mode to the Optimizer Setup dialog for creating modulation files
- Updated Split Port Calibration in Call All
- Updated Banded 2D Calibration:
  o Banded System Measurement Setup
  o Banded Millimeter Configuration dialog
  o Added Millimeter Source Linearity Cal to Banded Installation Calibration
- Updated Hybrid Source Calibration:
  o Multiplier External Device dialog
  o Hybrid Multiplier Installation Cal dialog

Issues Resolved

- Automatic Fixture Removal - Fixed characterization of 1-port reflection standards on single ended fixture
- Calibration – Fix error in Cal All when sending SMC LO Cal Smart Cal commands
- Calibration - Fix missing "Force power sensor de-embed" from Cal Wizard when using noise source to calibrate NFX channel
- Calibration - Fix inability to use TRL calibration in some custom calkits
- Calibration - Fix invalid Adapter Delay with CW sweeps or fixed input/output SMC sweeps
- Differential I/Q - Fix error when using source phase control and Embedded LO
- Display - Fix marker display when stimulus has 9 digits
- Display - Fix behavior of preference "Limit: Test the nearest measurement point"
- Display - Display correct synthesizer version for N523xB in Help -> About
- Display - Display SrcPwrCal label for balanced parameters
- Display - Disable power softkey entry when port is a Global Source
- Display - Fix flashing on slow Trace Deviation sweeps
- ECal Characterization - Allow more flexibility in connector information for multiport N756xA ECals
- Fixture GUI - Improved UI
- Misc - Allow up/down hard keys to be pressed multiple times without re-selecting control
- Phase Reference - Fix SCPI commands for when more than one phase reference is connected to VNA
- Point Sweep - Fix point sweep in CW mode

- Receiver Leveling - Fix storage of source power cal array when using receiver leveling and point mode
- Recall - Fix errors on corner-case and older state files
- Simulator - Improve experience of one port power calibrations when using "Multiple Power Sensors"
- Spectrum Analyzer - Fix power level using Marker -> SA feature when power requires attenuator change
- Spectrum Analyzer - Spectrum Analyzer advanced IF Settings tab now includes negative IF Gain settings
- SMU - Fix error when configuring N6705C SMU as External Device
- Wideband Active Load Pull - Fix missing sample rate optimization
- Wideband Active Load Pull - Fix duplicate point created by Arbitrary Load Control

A.19.00.09 Version Information

Compilation Date:	07 Oct 2024
Operating System:	Windows 10
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.19.00.09.exe

Note: With A.19.00.09 and above, Windows 7 is no longer supported.

Enhancements

- Keysight License Manager and PathWave License Manager updates

Issues Resolved

- Broadband - Fix errors with the S93301B Broadband VNA to 220 GHz license
- Calibration – Fix Cal All issue that could sometimes drop LO power calibration when used from SCPI
- Differential IQ – Fixturing improvement when port number is greater than 9
- External Source - Fix VXT "Undefined header" error
- Modulation Distortion – Fix dynamic gain error
- Modulation Distortion – Fix "incompatible measurement" error that can happen when performing a source modulation calibration
- Spectrum Analyzer – Fix error when using enabling modulation using internal port with N522xB analyzers.
- SMU - Fix errors with N6750C SMU

A.18.40.03 Version Information

Compilation Date:	03 Sep 2024
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.18.40.03.exe

Enhancements

- Display - Virtual Port Indicator
- Calibration - Power Limit during Calibration
- Calibration - Power Off after Cal Preference
- Calibration - Split Port Calibration in CalAll
- Modulation Distortion - Added Waveform/Source information to Properties
- Modulation Distortion - Added Phase Stitching Type and Raw Data Diagnostics
- Modulation Distortion - Added Operating Gain and Power traces descriptions
- (N52xxB) Phase Reference Import Port
- (N524xB) Noise Figure - Added U722xx support with N529xA mmWave head
- (E5081A, M983xA) DPD and VSA Link
- (E5081A, M983xA) Calibration - Improved CalAll grouping algorithm
- (E5081A, M983xA) Noise Figure - Enabled Multiple Gain cal for NF calibration
- (M983xA) GCA parallel measurement

Issues Resolved

- Calibration - Fix incorrect query for 85058B cal kit name
- Calibration - Fix output match at enhanced response + power cal
- Calibration - Improved back button operation
- Calibration - Fix measurement parameter display during calibration steps for remapped ports
- Fixturing - Fix recovery of s2p files from csa files
- Power Sensor - Fix crash on PMAR name with a comma character
- External Source - Add SYST:CONF:EDEV:RCL:VNA:STAT to select reference state
- Memory Trace - Fix time domain marker on a memory trace
- Memory Trace - Fix memory trace for polar format
- Undo - Fix crash on multiple undo for application channels
- mmWave - Fix available IF gains on mmWave config dialog
- Mixer - Fix recalling mixer configuration CSV on banded system
- Modulation Distortion – Fix cal indicator value after changing port mapping
- Modulation Distortion – Fix crash on 8-term error correction model
- Modulation Source Correction - Fix SOUR:MOD:CORR:COLL:ACQ
- Spectrum Analyzer – Fix memory trace flicker when changing frequency span
- TMSA - Fix unable to change the port power
- Gain Compression - Fix power sweep point behavior on setup dialog
- Noise Figure - Fix blank errors during NF calibration
- Noise Figure - Fix Focus CCMT-3 tuner control
- Active Hot Parameter - Fix calibration

- (N52xxB) Fix SCPI error for sweep time jitter
- (N52xxB) Fix crash on mmWave Installation Cal
- (N52xxB) Fix mmWave Installation Cal for 4-port
- (N52xxB) Fix receiver leveling for Port 1 Src2
- (N52xxB) Spectrum Analyzer – Fix phase reference cal vis CalAll
- (N524xB) Noise Figure - Fix Port1 Noise Tuner SW state control during VNC
- (N524xB) Noise Figure - Fix S2P file save
- (M980xA) Active Hot Parameter - Fix "Port 1 was set to OFF" error
- (E5081A, M983xA) Fix Auto LF IFBW at calibration
- (Simulator) Fix crash ay Modulation Distortion with M983xA

A.17.60.13 Version Information

Compilation Date:	13 Jun 2024
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.17.60.13.exe

Issues Resolved

- Active Hot Parameter – Fix error "Error Term Not Found" at end of calibration.
- Enhanced TDR – Fix error with gate coupling.
- External Source – Enable the hardware trigger for external source AGMXG on M983Xa and E5081A.
- M9837A – Fix receiver noise figure ADC overflow from 37.16 G to 40 GHz
- Multiport ECal – Improved behavior when using N7564AEP with noise figure channel calibration.
- Multiport Testset – When the ports are remapped, display the correct parameter when calibrating.
- PXI/Streamline VNA – Fix incompatibility with Windows 11
- PXI/Streamline VNA – Fix Source Power Alignment Macro
- Real Time Uncertainty – Fix "Measurement not found" error when performing uncertainty calibrations with mechanical calkits.
- SCPI – Fix CSET:ETERm:X:VALues
- True Mode Stimulus Application (TMSA) – Fix the soft key entry for changing the power level.

A.17.60.10 Version Information

Compilation Date:	03 May 2024
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.17.60.10.exe

Enhancements

- Isolation Calibration is available in 2 port calibration using a mechanical cal kit.
- Smith Chart can be displayed during Noise Figure Calibration
- Ecal Temperature Query
- Generic Ecal Control commands which supports multi-port Ecal (over 4 ports)
- Added capability to turn off noise receiver pulling during calibration
- Added support for importing Python files into the equation editor
- Hybrid Source enhancements
- Added Pulse Timing dialog for Standard measurements
- (N524XB) Added LO Phase Calibration adjustment
- (E5080B, E5081A) Preference: Factory Calibration can be turned off at default
- (M980X) Supports M9168C/E PXI Programmable Step Attenuator Module
- Modulation Distortion – Added PGainWave and MGainWave
- (M980X) GCA Parallel Measurements
- Customize display option: X-axis Annotation for All Traces
- Digital modulation format: QAM-1024

Issues Resolved

- Active Hot Parameter – Fixed "error term required" error
- Active Hot Parameter – Fixed the Start/Stop power softkeys
- Data to New Trace – Improved reliability within application channels
- Cal All – Fix GUI issue with selecting channels and selecting ports.
- Cal All - Fix power level when doing independent power calibrations.
- Calibration - Added loss table to the calibration summary page
- Calibration – Fix incorrect caching of "Use Existing Power Cal" checkbox
- Calibration Plane Manager – Added SCPI commands for reversing S2P files
- Calibration Plane Manager – Fix CSET:FIX:ZERO to support arbitrary port number
- Calsets – Display unknown thru delay
- Calsets – Speed improvement when loading calsets with a massive number of ports.
- Data to New Trace – Add Mag Offset.
- ENA-X – Reduce size of dialogs for RF/IF Path Config to 85% of original size.
- External Source – Update Keysight M8195 driver with fixes
- External Source – New SCPI commands for querying and setting the state of the reference for external source
- External Source – Modulation – Limit the max oversample to a reasonable level.
- Fixturing – Fix fatal error that happens sometimes after recall of state, using cal all, and opening fixture GUI
- Licensing – For PXI modules, add support for licenses without 3 digit extensions

- M980x – Swept IMD - Removed minimum tone spacing of 1 MHz
- M980x – Fix Swept IMD corner case in Direct Receiver Access (DRA)
- M981X – When using VXT, fix "Unexpected error; VXT:-222,"Data out of range;" error
- P937xA – Fix rear panel SMC trigger line with trigger changes from GUI.
- PNA Multiport Testset – Fix fatal error when using power calibration on impossible receiver combinations.
- Magnify –Support unlimited magnification on trace
- Modulation Distortion – Fix fatal error that can happen when the carrier power is toggled rapidly
- Modulation Distortion – Improve auto equational aperture algorithm for wideband, sparse tone case
- Modulation Source Correction– Improve behavior when the source needs resampling to a wide IQ bandwidth
- Modulation Source Correction – Fix ACP upper cal span GUI for source ACP correction
- Modulation Source Correction – Fix saving multiple carrier frequencies into the same .mdx file
- Noise Figure – No longer allow N7564A calibrator as the noise figure tuner. It does not have the measurement characteristics to be a valid tuner.
- Noise Figure – Fix fatal error that happens when calibrating a large number of noise figure channels
- Phase Reference Cal – Fix use of non-insertable ecal with user characterization
- Power Sensors – Fix use of power sensors over VISA sockets
- Swept IMD – Simplified IMD SCPI commands for setting RF2, LO1, and LO2 sources
- SCPI – support Windows 1252 encoding characters – extended ASCII characters.
- SCPI – Fix CALC:MEAS:MATH:NORMALIZE
- SCPI – Add DISP:SHEet:LIST to return list of sheet IDs
- SCPI – Added SCPI commands to display smith chart during calibration
- Service program updates – Updates to various service programs
- Spectrum Analyzer – Added diagnostic if the IF Phase calibration is missing
- Spectrum Analyzer – Enable group delay aperture
- Spectrum Analyzer – Fix autoset marker display with coherent sweep
- Spectrum Analyzer – Fix behavior of markers at the edge of the sweep
- Splash Screen – New loading screen.
- Time Domain - Rise time should not affect windows other than Kaiser
- Toolbars – Fix fatal error when using time domain or port extension toolbars with recall.
- Trigger – Fix channel trigger delay setting from the GUI.
- VISA Passthrough – Close VISA passthrough sessions when underlying USB device is removed.

A.17.30.08 Version Information

Compilation Date:	08 Mar 2024
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.17.30.08.exe

A.17.30.08 is the Production Release.

All shipping PNAs will contain this version until the next Production Release.

Features

- Contains all Enhancements and Fixes through firmware A.17.25.05.
- Support for new software licensing structure with embedded types and durations
- Includes IF Phase Cal

A.17.35.14 Version Information

Compilation Date:	05 Feb 2024
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.17.35.14.exe

Issues Resolved

- Active Hot Parameter – Fixed "error term required" error
- Active Hot Parameter – Fixed the Start/Stop power softkeys
- Data to New Trace – Improved reliability within application channels
- Differential IQ – Enabled source leveling of 2 sources simultaneously
- E5081A – Fixed error when using over 10 V for SMU setting
- ECal – Fixed issue with saving ecal user characterization to disk
- Enhanced Time Domain Analysis (TDR) – Fixed error that could occur after a sequence of GUI actions
- External Source – Added support for new MXG N5186A with the "MXG_Vector" driver
- Fixturing – Fixed error that occurred sometimes when opening fixture dialog after running Cal All
- Launcher – Fixed defect with using more than 2 SMU modules
- N756xA Multiport ECal – Enabled confidence check over SCPI
- M980XA/M983XA – Fixed use of DMM or SMU with Aux Trigger
- M9810A+M9336A Vector Modulator - Fixed SParameter measurements in MOD with this hardware
- Modulation Distortion – Increased the number of traces to 35
- Modulation Distortion – Fixed error when loading waveform with all zeros
- Multiple Power Sensor Calibration – Added error message when disabled when "use primary frequency" preference is true
- Noise Figure: Fixed failure to turn ON some U1832x/U1833x Noise Sources
- PNA series – Added minor revision display for DDS Synthesizer
- Power Meter as Receiver (PMAR) – Fixed use of Sensor C or Sensor D when connected to a power meter
- Power Meter as Receiver (PMAR) – Fixed measurements on channels with point count of 1
- Power Sensors – Added N1913B/N1914B EPM Power sensor support
- Phase Reference Calibration – Fixed error when using user characterized non-insertable ecal
- Swept IMD - Fixed an issue with setting the tone power when using an external source as one of the 2 tones
- User Delta Match Correction – Fixed delta match on PNA-L models

A.17.35.10 Version Information

Compilation Date:	04 Dec 2023
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.17.35.10.exe

Enhancements

- Include Loss in TDR fixture compensation
- Macro Control for NF measurement path switching (S9x029B, Licensed Feature)
- Code Emulator for E5071C supports the customized returned value for *OPT?

Issues Resolved

- Active Hot Parameters: Fix power sweep
- Cal All: Fix response calibration such as "TransResp 2 <= 1"
- Cal All: Fix issue where the power cal settings page was skipped with independent cal channels
- Calibration: Fixed issue with using ECal with 4.3-10 connectors
- Citifile: Loading a unitless ("Point") citifile no longer automatically activates Extra Security
- Differential I/Q: Improve power offset behavior during calibration
- External Source: Improve M8190+PSG driver. Now RF power is turned OFF while changing waveforms
- Fast CW Measurements: Fix trigger when point count is set to 1
- Noise Figure: Fix source power calibration step when using NF macro on ENA-X
- Noise Figure: Improve calibration wizard so that it automatically remembers more settings
- Noise Figure: Fix SYSRNPI trace issue after 40 channel averages
- Noise Figure: Fix display of filter shape during NF power cal
- Power Correction Dialog: Fix issue that happens sometimes when opening and closing power correction dialog
- Scalar Mixer/Converter: Fix SENS:CORR:COLL:GUID:SMC:IMP to work with non-zero power offset
- M98XX: Fix high noise floor at pulse profile on 4/6-port modules
- ENA-X: Turn off port lights when the power is turned OFF

A.17.35.05 Version Information

Compilation Date:	06 Nov 2023
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.17.35.05.exe

Issues Resolved

- AFR – Fix differential DUT impedance correction issue
- Calibration – Cal All - Improve error message when noise figure bandwidth is above 4 MHz
- Calibration – Cal All – Enable the use of cal all for more than 129 channels
- Calibration - Cal All - Fix issue where the power cal settings page is skipped when using independent calibration channels
- Calibration – Enable the "Use Primary Frequencies" preference for M98XX VNA series
- DC Meters – Fix problem when de-activating DC meters from external device configuration while traces are displayed
- Differential I/Q – Fix SCPI interface problem introduced in A.17.25 release
- Fast CW – Fix infinite fast CW: SENS:SWE:TYPE:FACW -1
- Fixturing – Fix corner case where sometimes extrapolation could not be turned on for fixture elements
- Fixturing - CSET:DEEM – Fix behavior when using arbitrary segments
- Measurement – Fix error when using New Trace… dialog after SYST:FPR
- Scalar Mixer/Converter – For multiple power sensor calibration, fix adapter removal
- Scalar Mixer/Converter – Fix error that can happen when moving back and forth through the cal wizard
- Scalar Mixer/Converter – When switching to power sweep, set the x-axis to "Input" for backwards compatibility
- Modulation Distortion – Fix DC meter traces when the DUT input port is set to something other than Port 1
- Modulation Distortion – Updated the description of LMatch2
- Modulation Distortion – Added new SCPI commands for setting the DUT ports
- Noise Figure – Fix problem using noise figure macro during noise figure calibration
- Spectrum Analyzer/Modulation Distortion – Fix issue with connecting the VSA application to M98XX VNA
- Spectrum Analyzer/Modulation Distortion – Improve calibration of phase when not using phase reference
- Mechanical Cycle Counter – Fix issue where mechanical cycle counter sometimes gets reset when changing hard drives
- Simulator – Fix simulation of active parameter with power sweep
- Simulator – Fix the use of counted licenses with simulator

A.17.25.05 Version Information

Compilation Date:	15 Sep 2023
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.17.25.05.exe

Enhancements

- Multiport Calibration Assistant – Multiport ECal N756xA support for PXI switches
- Display – RF power on the x-axis (standard channel only)

Issues Resolved

- Calpod – Fix calpod not recognized as an ecal
- Display – Fix markers in smith and polar formats
- Equation Editor – Fix issue, post recall, when referencing a non-displayed MEM trace in equation editor.
- M9384A, M9837A - Enable the Noise Figure Macro on these platforms
- M9800X – In Swept IMD, default the IF Gain to LOW
- Modulation Distortion – Fix measuring LoadMatch2
- PNA-X Source3 – Fix "Ignore Power On Preference" global source setting with Source3
- Spectrum Analyzer – Add SCPI commands for the Spectrum Analyzer Correction Methods feature
- True Mode Stimulus Application – Fix Power And Attenuators dialog while TMSA is enabled

A.17.25.03 Version Information

Compilation Date:	03 Sep 2023
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.17.25.03.exe

Issues Resolved

- Active Hot Parameters – Enable use on multiport PXI systems with more than 4 ports
- Calibration – Fix SENSe:CORRection:CSET:FLATten on slow sweeps
- Calibration – Enable enhanced response cal with N7562/4x Multiport Electronic Calibration Module (ECal)
- Differential IQ - Enabled the CALCulate:PARameter:COUNt command
- Differential IQ - Fixed issue with DIQ:FREQ:RANGe? query
- External Device – Disallow OK button when the IO configuration is incorrect
- External Source: Fix issue with M9484B driver
- Modulation Distortion - Fix SCPI command SOUR:MOD:CORR:COLL:ACQ:DETails
- Modulation Distortion - If the signal is NOT FlatTone/NPR, then autofill will use 99% of Occupied Bandwidth
- SMC+Phase – Fix problem with importing Phase Reference Calset for SMC+Phase channels
- Spectrum Analyzer – Various improvements for dual band mixer measurements
- Spectrum Analyzer – Enable the Correction Method Dialog without requiring Modulation Distortion License
- P937xA – Fix banded installation

A.17.20.08 Version Information

Compilation Date:	09 Aug 2023
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.17.20.08.exe

Note: With A.17.20.08 and above, export controlled features now require one of the S9480xB licenses to unlock the full feature set.

Enhancements

- Focus Tuner support with Noise Figure Application
- New SMU Support (PZ2100A, PZ2121A, PZ2131A)
- SCPI Recorder
- Multiple Memory Traces
- Segment Trigger
- IO Control Per Segment
- Calset Property Dialog shows more information
- Cal Kit Editor Change
- Improved Edit Visa Address
- MOD/X DC trace
- Save and Recall Calibration Configuration
- DUT SNP simulation for SMC and GCA /GCX (Simulator only)
- ECal emulation on VNA simulator (Simulator only)

Issues Resolved

- Banded – Improve efficiency of calibration when output frequencies are baseband
- Banded – Allow setting PMAR to the same start/stop frequency during calibration
- Banded - Fix operation of banded with a thru in Scalar Mixer/Converter calibration
- Calibration – Enable the use of SENS:CORR:COLL:GUID:ABOR during asynchronous calibration
- Correction – Calsets that are pure subsets no longer show as C Delta
- Correction - Improve calibration interpolation algorithm
- Data Saving – Fix issue with MMEMory:STORe:DATA with "Channel" parameter
- FIFO – Resolved issue with ordering when using both R1 and R2 on a 4 port PNA
- GUI - Increased resolution of power slope in the Power and Attenuators Dialog
- Licensing - Added new licensing for hybrid source S94800B, S94802B
- Limit Lines – Fix display of a signal point limit line
- Modulation Distortion – Enable the use of the status bar to turn off correction
- Modulation Distortion – Improve source calibration with a swept list of powers
- Modulation Distortion – Improve source calibration when signal has roll off

- Modulation Distortion for Converters - Fix EVM measurement when the device has significant gain
- Modulation Distortion for Converters – Enable saving modulation settings from DDS unit to non-DDS unit
- Power Meter – Resolve error that occurred on a limited number of sensors: "-221,"Settings conflict;SENS1:CORR:CSET1:STAT 0".
- Scalar Mixer/Converter - Allow, for a power sweep, x-axis to be displayed as Output
- Scalar Mixer/Converter – Enable setting output power in Power Sweep when output is Port 3 or Port 4
- Spectrum Analyzer - Embedded LO improvements
- Spectrum Analyzer - Improve fixturing extrapolation behavior
- Spectrum Analyzer - Set a more conservative default ADC overrange of 60% instead of 80% to catch receiver overload
- Spectrum Analyzer – Improve marker resolution when using coherent mode
- Spectrum Analyzer – Add more port softkeys
- Spectrum Analyzer – Enable phase display without detector bypass using fast peak mode
- Spectrum Analyzer – Fix power offset settings when using marker->SA
- Service – Fix the "Operation Cancelled" error in IF Cal
- Swept IMD - Fix issue with response calibrations
- Swept IMD - Enable the Source3 option in the list of sources
- Swept IMD - Fix issue on PNA where the input port was not Port 1
- Swept IMD – Resolve issue when the tone spacing is very wide with receiver leveling and correction

A.17.00.05 Version Information

Compilation Date:	03 May 2023
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.17.00.04.exe

Enhancements

– Trace statistics for Smith Chart format can also be displayed in units of impedance (ohms)
– Modulation Distortion - Added compacting and max NMSE to Dynamic Gain model details
– Added support for hybrid source, which combines source and mixer to create a high-frequency source
– APSK-8 and 8PSK waveforms can be created using the Create Digital Modulation feature
– Simulator support for M9834A and M9837A locking to 80 MHz reference Input

Issues Resolved

– AFR – Updated the SCPI command AFR:STANdard:EDIT:FLENgth to support 2X thru
– Cal All – Fixed step ordering when using a PowerTable
– Cal All – Add new argument to "SYST:CAL:ALL:GUID:CHANnel?" to retrieve guided cal channel number
– Cal All – For independent calibration channels feature, add new column showing the calibration channel #
– Calset – Enable uploading error terms with different point counts than the main calset stimulus
– Calsets – Eliminate unnecessary "overwrite calset" warning prompt
– Differential IQ - Improve initial power level when using Port 1 Src2 with combiner path
– Differential IQ - Fix issue when using two different port pairs for phase control
– External Devices – Report external device errors into the SCPI error queue as well as the GUI
– External Devices - Added option to clear the cache on external devices via new button in External device dialog
– Fixturing – Enable CSET:FIXT:DEEM and CSET:FIXT:EMBed to work on ports with only SourcePowerCorrection terms
– Fixturing - Allow embedding of s2p files with 0 transmission parameters
– IMD – Fixed crash in Cal All when using ecal extrapolation
– Licensing – Updated to 5.5.1
– Markers – Improved update on markers when uploading data
– Modulation Distortion – Fix blank distortion page shown sometimes displayed at recall
– Modulation Distortion - Improve the PAPR result of compacting waveforms
– Modulation Distortion - Fix results for EVMIn and EVMOut when using multiband signals
– Modulation Distortion - Added remote commands for creating digital modulation waveforms
– Modulation Distortion - Fix text alignment issue in the modulation properties dialog
– Modulation Distortion for Converters – Embedded LO – Improve tuning with high side LO mixers

- Modulation Distortion on converters – Embedded LO - Allow user to set the frequency delta within the ELO dialog
- Noise Figure - New SCPI command: SENSe:CORRection:ENR:CALibration:TABLe:TEMPerature:DATa
- Noise Figure – Improve noise figure when using Low Frequency Mode on PNA platform
- Noise Figure - Added GUI support to save the USB ENR file
- Phase Reference Cal - Fixed issues when calibrating using N5221B/N5241B and N5227B,N5247B analyzers
- Phase Reference Cal - Fix initial status so that it doesn't report Fail before any data has arrived
- Preference – Improve behavior of "Power Off on New Channel" preference
- Recall – Fix recall of old states from before A.10.XX when the state included balanced parameters
- Scalar Mixer/Converter – Improve performance when sending many SCPI commands to change the state
- Scalar Mixer/Converter – Improve behavior of multiple sensor calibration
- Simulator – Fix issue when entering the interface control dialog
- Spectrum Analyzer - Added support for SENS:CORR:COLL:GUID:CKIT:CAT command
- Spectrum Analyzer - Various other improvements
- VXT – Fix two tone waveform playback when using VXT source

N5290A/N5291A – Fix receiver leveling on Port 2 of broadband system when Port 1 is not connected to testset

Modular VNA only
- Pulse – fix setting the REAR_TRIG1 and REAR_TRIG2 modulator drive input from the pulse setup dialog
- HiSLIP - Fix issue where HiSLIP interface could be unavailable when application is closed and restarted

M983X - External reference – add preference for external reference settings being affected by recall/preset

E5080B – Enabled swept IMD with dual reference receiver mode for E5080B platform statistics for Smith Chart format can also be displayed in units of impedance (ohms)

A.15.71.08 Version Information

Compilation Date:	19 Dec 2022
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.15.71.08.exe

A.15.71.08 is the Production Release.

All shipping PNAs will contain this version until the next Production Release.

This version was released along with the change to the version 9 CPU board.

Enhancements

– Enable locking to 80 MHz reference Input

A.16.20.04 Version Information

Compilation Date:	03 Feb 2023
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.16.20.04.exe

Enhancements

– E5080B - Add calibration advisor tool
– Updated help file M9837A.

Issues Resolved

– Calibration - Fix calset interpolation issue for non-standard channels
– E5080B - Fixed rare intermittent error at startup
– Fixturing and TDR – Fix "invalid circuit found" when using the fixturing GUI with Advanced TDR
– M983XA – Fix launching cal wizard with "RF Mixer" is set to "RF" in the path configuration
– M983XA – Fix attenuator setting when using RF Mixer as "Baseband" or "Mixer" in the path configuration
– Noise Figure: Fix excess ripple for swept LO measurements when performing power-meter calibration using power sensor adapter de-embedding
– Noise Figure -- Impedance state setting no longer reset when changing noise tuner.
– PXI and E5080B – Fix status bar which showed the "SVC" message incorrectly when turning off factory cal
– PXI & Streamline – Enabled the "Soft Front Panel" button within Keysight IO Libraries
– Recall -- Improve recall speed when recalling multiport corrected states with external test set.
– Recall -- Instrument State file size reduced when storing trace data (HOLD mode).
– Spectrum Analyzer – Fix the "SENS:CORR:COLL:GUID:CONN:CAT?" SCPI command to work in Spectrum Analyzer

A.16.20.02 Version Information

Compilation Date:	22 Nov 2022
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.16.20.02.exe

Enhancements

- Added new SCPI Example Programs in Python Environment
- Modulation Distortion Enhancements:
    - Added Ideal Wave Trace
    - Added Nominal DUT NF
    - Added PAPR prioritization for Compact Modulation
    - Auto Save VSA state within VNA state file
- IMD Multiple Receiver Configurations [requires active Option S9x087A/B KeysightCare subscription]
- Actual Wave and 8-term error correction method in IMD/IMDX [requires active Option S9x087A/B KeysightCare subscription]
- Added Dynamic Gain in Digital Predistortion (DPD)
- Support DPD in Modulation Distortion Converters Measurement Class (MODX)
- Multi-sensor Power Calibration for SMC/GCX [requires active Option S93082B, S93083B, or S93086B KeysightCare subscription]
- Noise Figure Sweep Switch commands (SENS:NOIS:SWE:MACR:FIL:RNP, SENS:NOIS:SWE:MACR:FIL:RSP)
- Support the M9834A and M9837A.

Issues Resolved

- Banded – Fix preference: "Cal: For Frequency Offset, use Primary Frequencies" when using correction interpolation
- Cal Update – Numerous bug fixes
- Data Save - Fix issue when saving CSV file with x-axis as time
- Data Save – Fix issue when saving S2P file with parameter conversions enabled
- Display – Improve dialog placement when using multiple monitors
- Display – Fix magnify behavior when using Log X-Axis
- External Source - Improved code for detecting reference lock with external sources
- External Source – Add support for M8195, M8196, M8199 baseband DUC mode
- External Source – Fix bugs when using Keysight M9484C Source with bandwidth restricted options
- External Source – Fix optimized BNC triggering when using segments with independent power values
- Fixturing – fix error that would sometimes warn for extrapolation when extrapolation was not needed
- Fixturing – Improve parsing of snp files

- Fixturing – Fix power compensation when using isolator fixture
- Gain Compression – Fix crash when using smart sweep and point averaging
- L8990M - Propagate errors to the SCPI error queue from L8990M (SYST:ERR?)
- Modulation Distortion and source correction – Numerous fixes
- Noise figure – inhibit popup message box during noise cal when client is remote
- Noise Figure Cal – Clarify prompts when a thru adapter is also used as a power sensor adapter
- Noise Figure Automatic Switch Mode - set switches back into S-Parameter position after noise sweep is complete
- Noise Figure Automatic Switch Mode – avoid firmware crash that sometimes occurs when recalling state file
- Power Sensor – Fix issue where firmware incorrectly determines that W8486A sensor has internal cal factors
- Recall – Improve recall speed with systems with large port counts
- Status Bar – Fix "Swp" indicator that is sometimes wrong when in "Hold" for very fast sweeps
- Status Bar - Improved annotation of source power correction state in the status bar
- Status Bar –Now, changes to power level do not show C-Delta because power level changes don't impact quality of correction
- SA – Improve auto RBW search
- SA – Fix issue where it was impossible to turn off correction
- SA – Fix issue with receiver leveling and corrected SA measurements
- Simulator – Fix usage of DC Source and DC Meter
- Swept IMD – Improved status bar output of the correction types
- Undo – Fix undo on frequency change when using correction

PNA Only Bug Fixes
- PNA Only - Multiport Testset - Fix correction subsetting
- PNA Only - Multiport Testset – Fix receiver leveling when using multiport testsets
- PNA Only - SA – Enable access to narrowband IF settings on PNA (not just PNA-X)
- PNA Only N5291A – Fix system when only 1 head is connected

M9383A Only Bug Fixes
- M9383A Only – SMC+Phase – Fix unstable first point problem

A.15.75.22 Version Information

Compilation Date:	06 Sep 2022
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.15.75.22.exe

Issues Resolved

- CalPod - Fix issue affecting using the CalPod as an ECal standard
- Modulation Distortion on Converters - Fix error when using single ended EVM within Modulation Distortion for Converters
- M9800X - Fix intermittent error that happens when using sweep averaging and sweep aborts
- Scalar Mixer/Converter + Phase - Fix phase reference calibration wizard on N5244B when the stop frequency is the same as the max instrument frequency
- Fix Streamline Chassis driver installation issue

A.15.70.20 Version Information

Compilation Date:	23 Aug 2022
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.15.70.20.exe

A.15.70.20 is the Production Release.

All shipping PNAs will contain this version until the next Production Release.

Enhancements

- Core Software licenses and subscriptions now supported

A.15.75.19 Version Information

Compilation Date:	27 Jul 2022
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.15.75.19.exe

Enhancements

– Digital Predistortion (DPD) [gated by S93090xB OR S93070xB KeysightCare subscription]
– Digital Modulation Creation [gated by S93070xB KeysightCare subscription]
– N5291A170 (170 GHz) and N5291A220 (220 GHz) Millimeter Wave Broadband Measurements Systems
– Added embedded LO setup to SMC Mixer Setup dialog
– Single Port EVM Analysis for Modulation Distortion Measurements [gated by S93070xB KeysightCare subscription]
    o 8 parameters to Distortion Table
    o 4 parameters to Measurement Parameters
– NF Automatic Switch Control [gated by S9x029B KeysightCare subscription]
– Added four new Windows types for TDR [gated by S9x010B OR S9x011B KeysightCare subscription]
– Add external combiner for Swept IMD for PNA-X models
– Enabled additional format types for markers in SA

Issues Resolved

– [Cal] Fix Cal All attenuator page to properly change min/max
– [Cal] Fix the delta annotation when a calibration is subset
– [Cal] Fix CSET:FIX:DEEMbed command to work on M98XX units
– [Cal][SCPI] Added SENS:CORR:COLL:GUID:ECAL:PORT:OFFS command for 8 port ECal
– [Cal] Fix crash when changing parameter from SParameter to equivalent wave ratios while using correction
– [Copy Channel] Properly copy a channel with a source calibration when the calset has a different power offset
– [Copy Channel] Fix copy of correction method settings
– [Copy Channel] Copy the group channel trigger count
– [Differential IQ] Fix issue where implicitly added sources had the wrong settings
– [Display] Customize display now remembers most recent tab
– [Dynamic Uncertainty] Fix dynamic uncertainty with power sensors calibrations
– [External Device] Enable the use of DC meters parameters with an external source as source port: eg: "SMU,MXG"
– [FCA] Fix nominal incident power, and add missing GUI
– [Files] Fix CSV file export when using smoothing
– [Files] Fix loading SnP file on M980X units

- [Files][SCPI] Fix saving SNP file in FAST mode when time domain is turned on
- [Fixturing] Enable the use of s2p files with -200 dB as the transmission parameters
- [GCA] Fix crash when applying a response correction to a GCA channel
- [Modulation Distortion] Fix behavior of source calibration and power offsets
- [Modulation Distortion] Fix loading of CSV files stored as UTF-8 format
- [PNA] Fix slow sweep when the span is extremely small (~1 kHz)
- [PNA] Fix 2 port single source with test set N5262A
- [PNA] Fix SYSTem:ABORt:THReshold when using multiple sweeps in a single channel
- [Power Meter] Add missing Save/Load button to cal factors in PMAR
- [Power Meter] Add support for U2021XA sensor
- [Power Calibration] Fix issue when trying to run power calibration with receiver leveling already ON
- [Power Calibration] Allow turning off "reduce IF BW" when performing multiple power sensor calibration
- [Power Compensation] Fix applying power compensation when state is toggled (could sometimes be stale)
- [Receiver Leveling] Various fixes, and fixed use with receiver leveling with frequency offset
- [Receiver leveling] Fix certain receiver leveling use cases when used with SA
- [SCPI Log] Extend character limit to 20k. Improve behavior when limit is exceeded
- [SCPI] Add SYST:MCL:VALID:CATalog
- [SCPI] On M980X units, fix SCPI query SENS:CORR:COLL:GUID:THRU:PORTs?
- [SCPI] Fix SYST:CAP:LIC:CAT? VALID on P50xA/B products
- [SMC+Phase][Absolute Phase] Enable absolute phase during the measurement of a characterized mixer

A.15.65.19 Version Information

Compilation Date:	26 Apr 2022
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.15.65.19.exe

Issues Resolved

- [Streamline] Transform cannot be turned on even though S97011B is installed. This issue occurs on P50xxB only, not P50xxA, P93xxB
- [All Platforms] Unable to use support contract feature: "AFR Config and 2X Thru for N Port"

A.15.65.17 Version Information

Compilation Date:	21 Apr 2022
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.15.65.17.exe

Enhancements

- Cal Update
- Add Load/Save power loss table for PMAR
- Preferences:
    - Cal: Use Unknown thru math for SOLT methods
    - Turn off Power on Preset
    - Add color coding to indicate whether preference is set to default
- PNA Only:
    - Absolute Phase
    - 4 GHz Analysis Bandwidth
    - VSA Link Autotune Spectrum

Issues Resolved

- Balanced: Fix hang when enabling certain balanced use cases and recalling legacy state files
- Cal: Fix rare intermittent error with using *OPC? on ECAL calibrations
- Cal All: Fix issue setting power offset through GUI for "Enable Extra Power Cals" power calibrations
- Cal Wizard: Updated the wizard so that the power cal settings page always shows the port number
- Display: fix location of Pass/Fail indicator
- Equation editor: Fixes
- External Devices: Improve error reporting to SCPI clients when an external device communication is interrupted
- External Source: Add CW phase control to vector sources
- External Source: Improve robustness of reference clock verification in vector sources
- Gain Compression: Fix save/load of caltype within Gain Compression
- Interface Control: Per channel settings were incorrectly applied
- Markers: Fix use of threshold value in the marker search dialog with multipeak
- Markers: Fix marker placement when using Memory Only trace
- Modulation Distortion: Fix crash when using Back button during cal wizard
- Modulation Distortion: Enable sweep averaging checkbox
- Modulation Distortion: Improve the speed of performing modulation distortion calibrations
- Port Extension: When Port Extension velocity factor is changed, do not modify data, only modify distance parameter. Port Extension model is delay only. Fixes backward compatibility issue

- Receiver Leveling: Properly disable point receiver leveling on channels that don't support it
- SA: When in high security mode, hide the frequency in multidimensional SA sweep
- SCPI Console Log: Fix clipping of first characters of SCPI commands from log
- SMC: During cal, update GUI when source cal is not within tolerance
- Time Domain: Fix coupling behavior for Kaiser Beta Value
- True Mode Stimulus: Improve robustness to recover from a noisy sweep
- VSALink: Improve error reporting for VSALink

PNA Only Bug Fixes
- Gain Compression Phase: Various fixes for Gain Phase Compression 2D mode
- LFE: Fix LFE dropouts on non-DDS synthesizer units
- Performance: Fix intermittent slowdown
- Point Sweep: Fixed corrupt sweep when point sweep mode is aborted
- Swept IMD: Fix use of BNC triggering for external source with swept IMD
- Swept IMD: Fixes for use case where external source is used as 2nd tone
- Measurement: Fix R2,1 on PNA so that it only takes 1 sweep

PXI VNA Only Bug Fixes
- SMC+Phase: Fix spike at 30 GHz

A.15.60.10 Version Information

Compilation Date:	21 Mar 2022
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.15.60.10.exe

Enhancements

– Updates Pathwave Calibration Advisor to version 1.0.53.

Issues Resolved

– General: Fixes issue where FIFO timing is inconsistent between sweeps in CW mode.
– SA: Fixes issue where external device frequency and RBW/VBW/NBW are not hidden in elevated security mode
– SA: Fixes a crash condition at SA setup advanced dialogs in case of no vector capability
– Pulse: Fixes Pulse Profile Issue with X-Axis patch - revert the x-axis behavior on instruments that take multiple acquisitions for pulse profile.
– Banded: Improves the handling of "not changable" configurations. Avoids an issue where N5290A ports were not being managed correctly.
– ECal: Fixes issue in ECal characterization.
– AFR: Fixes the issue that PNA mode conversion fails to give consistent result between load and measure
– External Device Control: Fixes bugs in SMU control dialog
– External Device Control: Adds check for incompatible versions of Keysight IO Libraries when controlling M8190
– Cal: Fixes issue in maintaining power offsets during a channel copy
– Cal: Fixes issue where calset flattening does not include power offsets.
– LFE: Fixes large power dropouts in receiver measurements

A.15.60.05 Version Information

Compilation Date:	17 Feb 2022
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.15.60.05.exe

Enhancements

- Support N755xA ECal modules
- Support L8990M Switch matrix – requires active KeysightCare support
- Modulation Distortion: Add support for 8-term correction

Issues Resolved

- Banded: Improve accuracy of source power correction after running a Cal All with a banded system.
- Banded: Fix smart cal using a power sweep on a banded configuration
- Calibrate All: In rare cases, fix independent power calibration to include necessary frequencies
- Calibration: Fixed rare error when the VNA would not interpolate calset even though frequencies were proper subset
- Calibration: Fix measurement of a2,2 trace on PXI or Streamline units with active factory calibration
- Calibration: Improve behavior of "enable multiple power sensors" when used via SCPI
- Calibration: Added response thru option when using ecal
- Differential I/Q: Fix crash when recalling a frequency range file with different frequency ranges
- Differential I/Q: Fix receiver leveling with external source
- Differential I/Q: Only show open loop option on the ports with open loop capability
- External Source: During modulation playback, add square wave output at "Sample Marker Out" connector
- Fixturing: Added new SCPI commands to reverse fixture: CALC:FSIM:CIRC:DEVice:PORTs:REVerse
- Fixturing: Add support for files that include 0 (-200 dB) for certain transmission parameters
- Fixturing: Skip noise parameter data when loading an sNp file
- Fixturing: Update fixture GUI to show proper labels when differential Z or common Z is enabled
- Gain Compression: Fix crash with point averaging, 2D sweep, and the use of analog inputs
- Modulation Distortion: Add ResBW, Vector Averaging, and Detector Type selections to the GUI
- Noise Figure: Fix fixturing with noise figure for converters where the input frequency is swept and output frequencies are fixed
- Phase Noise: Fix SCPI command SENS:CORR:CSET:FLAT on the Phase Noise channel
- Printing: Improved font sizing when printing
- Receiver Leveling: Fix problem of channel not being deleted with receiver leveling turned ON
- Receiver Leveling: Fix point mode receiver leveling when using external DC meters

- SCPI: Fix CALC:MEAS:Y:AXIS:UNIT? to return the proper unit
- SCPI: New SCPI command: DISPlay:SIZE[?]
- Spectrum Analyzer: Fix behavior of turning off correction
- Spectrum Analyzer: Significant improvements to Link VNA to 89600 VSA
- Spectrum Analyzer: Fix SCPI command SENS:CORR:CSET:FLAT in the SA channel
- Spectrum Analyzer: Fixes to the internal source modulation
- Spectrum Analyzer: Improve distortion calibration
- Streamline VNA: Improve resiliency of firmware when turning off and then turning on the chassis
- Swept IMD – Fix Cal All for Swept IMD when using an external source as the 2nd tone
- Swept IMD – Fix receiver leveling when using an external source as the 2nd tone
- Swept IMD – Automatically configure the path configuration when using the internal Port 3 as the LO for IMDX
- Swept IMD – Fix receiver leveling issue that caused Port 1 Src2 to briefly go unleveled

A.15.55.12 Version Information

Compilation Date:	21 Jan 2022
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.15.55.12.exe

Issues Resolved

- Fixed: ECAL without orientation generates an error in the Cal Wizard

A.15.55.08 Version Information

Compilation Date:	07 Jan 2022
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.15.55.08.exe

Note: this version has a bug which was fixed in A.15.55.12. Please use A.15.55.12 instead.

Enhancements

- Spectrum Analyzer Application Enhancements
    - o Enable Phase Stitching from hardware time stamps
    - o Compute SA Time Domain IQ
    - o Export IQ Data
- Link VNA to 89600 VSA
- Internal Source Modulation
- Noise Calibration Source Temperature
- Window Type added to Time Domain Setup dialog
- Aux Trigger in on M980xA series VNA
- Swept IMD on M980xA series VNA

Issues Resolved

- Calibration: Fixed averaging of response calibrated S41
- Calibration: Fix SENS:CORR:COLL:GUID:ETER:LOAD for M980xA series VNA
- Calibration: Fix SENS:CORR:CSET:FLAT with source power correction terms
- Calibration: Improve speed of applying calset
- Differential I/Q: Fix receiver leveling with external sources
- Frequency Offset Mode: Allow multipliers in Log Sweep
- Modulation Distortion: Fixed jump in MDist at edges of occupied bandwidth
- Modulation Distortion: Add ACPR parameters to measurement parameters and distortion parameters
- Modulation Distortion: Remove Delta IF Cal for PNA platform
- Modulation Distortion: Fixes for source calibration with power offset
- Millimeter: Fix usage of source power offset in calibration with millimeter
- Millimeter: Numerous fixes to the banded configuration dialog
- Noise Figure: Allow user to turn off sweep averaging during calibration
- Power Sensor as Receiver: Fix crash when external device names are unusual
- Print: Fix printing to "Microsoft Print to PDF" virtual printer
- Pulse: Fix pulse status indicator when doing smart calibration with pulse settings
- Pulse: Fix recall of pulse gating setting
- Receiver Leveling: Fix issue that exists with correction and toggling receiver leveling setting
- SA: Various fixes

– SMC: Fix power setting when using significant attenuator settings
– SMC: Fix CSET:FIXT:DEEM to work with SMC split calibration
– True Mode Stimulus: Fix copy channel

A.15.50.09 Version Information

Compilation Date:	28 Mar 2022
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.15.50.09.exe

A.15.50.09 is the Production Release.

All shipping PNAs will contain this version until the next Production Release.

Issues Resolved

– Update default LO synth power cal for noise figure

A.15.40.11 Version Information

Compilation Date:	23 Nov 2021
Requirements/Restrictions:	None
Operating System:	Windows 10 and Windows 7
Application Type:	64-bit
File Name:	VNA_x64_A.15.40.11.exe

Issues Resolved

– Fix R channel measurements on N5290A systems
– Fix recall of scalar mixer measurements when those measurements have a calset selected and a custom source power correction
– Fix auto attenuation behavior on 2 port 2 source PNA-X (Option 224)
– Fixed source power settling problem in instrument band crossing at 396 MHz

A.15.50.07 and A.15.40.08 Version Information

Compilation Date:	02 Nov 2021
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.15.50.07.exe and VNA_x64_A.15.40.08.exe

PNA users, this release includes an FPGA update. After installing the new firmware, follow the prompts to complete the upgrade. The upgrade process involves shutting down the PNA.

A.15.50.07 is the Production Release.

All shipping PNAs will contain this version until the next Production Release.

Enhancements

- Save Load files in CSV format
- Smart Cal Ports – Use Existing SrcCal when measuring cal standards
- Pulse Setup Primary Clock
- Support for U1832A/B/C/D and U1833A/B/C/D noise sources – requires active S93029B KeysightCare support

Issues Resolved

- Active Parameter: Fix annotation on unratioed units to dBm instead of dB
- AFR: Fix error of "Cannot send legacy fixture commands"
- Averaging: Restart averaging for all channels when the RF Power state changes
- Basic Cal: Fix buttons when more than 1 ECal is connected
- Banded: Fix issues with banded installation calibration
- Cal All: Fix using independent power calibration with split cal
- Cal Plane Manager: Fix issue where the unit was lost (MHz became Hz)
- Calset Viewer: Calset viewer now updates when the fixturing has changed
- Correction Methods Dialog: Fix error when the correction method was enhanced response
- Differential I/Q: Fix changing equation of a live parameter
- Differential I/Q: Fix using SCPI to set XAxis
- External Devices: Fix SOCKET communication with certain sources
- Fixturing: Add option to souce power compensate for de-embed only
- Fixturing: Add SCPI commands for selecting S2P modify mode
- Fixturing in IMD: Improve handling of frequency extrapolation
- IMSpectrum: Fix rare issue with coupled 2nd tone power level when using external source
- Licensing: Fix issue where support contract reported as expired if the last digit of the date was "0"
- Limit Lines: Increased maximum number of limit lines to 100,001 when loading from a CSV file
- Marker to IMSpectrum: Fix when used from IMDX power sweep
- Modulation Distortion: Add 8 term correction mode

- Modulation Distortion: Add Marker to SA feature
- Modulation Distortion for Converters: Fix embedded LO feature
- Modulation Distortion: Add "Delivered Power" Parameter
- Modulation Distortion Calibration: Improve source cal when the source response is significantly unfit
- Port Extension: Fix dialog syncing with active channel
- Power Sensor: Improve performance on connecting to a power sensor
- Power Sensor: Fix issue where sometimes USB sensor is not recognized
- Power Sensor: Avoiding showing devices that are not power sensors (such as smart noise source)
- PXI: (M937X or P937X) Fix date time of the System Default Cal
- Receiver Leveling: Fix issue with receiver leveling and toggling the correction state
- SCPI: Add SYST:COMM:DRIVE:ENAB? To query the state of "Remote Drive Access"
- SCPI: Return empty string instead of an error when searching for VISA devices and not finding any
- SCPI: Add commands for querying unit of x-axis and y-axis
- Simulator: Fix hislip address assignment when using simulator for PXI platform
- Spectrum Analyzer Measurement: Fix error "Cannot Deembed Fixture"
- Spectrum Analyzer Measurement: Fix bypass mode and x-axis point spacing feature
- Status Bar: updates to the Sweeping indicator on the status bar
- S2P: Allow recall of S2P files outside of frequency range
- Swept IMD and Fixturing: Fix use of power compensation
- Vector Mixer: Fix issue when running mixer characterization wizard "characterize as downconverter"
- PNA Arbitrary Waveform Generation on XSB Port: Add support for more sample rates

A.15.30.10 Version Information

Compilation Date:	28 Sep 2021
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.15.30.10.exe

Issues Resolved

- Differential IQ using N5290A/91A has invalid results
- Noise Figure and SMC+Phase intermittent crash

A.15.30.08 Version Information

Compilation Date:	06 Sep 2021
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.15.30.08.exe

Enhancements

- Software Support Licensing
- Updates to Fixture Simulator
- Compensate Only for De-Embeds (Fixture Generator)
- AFR enhancements
- Distortion: Enable ability to increase font size of the Distortion Table
- Distortion: Add support for waveform markers stored in original .wfm files
- Simulator: Enable dummy DUT tool with the viewer only license
- Interface Control: Copy interface control properties when copying a channel
- Improved Fixture GUI display for increased usability and UI bug fixes
- Fixturing: Embed Fixture S2P files with state files for recalling when the s2p path is no longer available

Issues Resolved

- Cal All: Fix independent calibrations when using noise figure
- Cal All: Fix when a single client channel has overlapping frequencies
- Cal All: Reset the cal all state when loading a file
- Calibration: Fix calibration when launched within manual trigger mode
- Compression Marker: Fix compression marker when using AM distortion analysis
- Distortion: Fixes to source correction
- Fixture: Fix intermittent "server busy" dialog
- Op Check: Fix GUI freeze
- TDR: Fix eye-diagram background to use same color scheme as other measurement displays

A.15.30.06 and A.15.05.06 Version Information

Compilation Date:	23 Jul 2021
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A.15.30.06.exe and VNA_x64_A.15.05.06.exe

Note: With A.15.30.00 and above, the N5251A system functionality has been removed. Support for the N5261A/62A test sets in banded mode remains.

Issues Resolved

- Error when recalling files created after the user opens the calibration preferences dialog
- (Fixturing) error when launching Port Z or Bal Z dialog from new Fixture Dialog
- (Cal All) Benign error when using independent source cals
- Inconsistencies in phase/delay of XSB modulated source
- Correction (interpolation) for banded VDI frequency extenders
- Source Power Correction interpolation for SourcePowerCorrection terms
- GCX Phase point averaging
- Power calibration (Cal All) bug using GCA
- Added compatibility to disable device side USB (LCA)
- (DDS) External reference input issue when installing firmware versions above and below A.14.60.xx. (Carrier FPGA upgraded to version 4.22)

A.15.00.14 and A.15.05.05 Version Information

Compilation Date:	21 Jun 2021
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A150505.exe and VNA_x64_A150014.exe

A.15.00.14 is the Production Release.

All shipping PNAs will contain this version until the next Production Release.

Enhancements

– User defined units for Differential IQ App (S93089B)
– More intuitive calset selection dialog
– Spectrum Analyzer: Improved wideband phase stitching behavior
– Spectrum Analyzer: Enable fixturing without correction
– CW Sweep: Modify the x-axis display to display the end time of each point
– External Source Control: Add support for immediate RF power off for generic sources
– Simulator: Enable control of external sources
– Enable power sweep when using receiver measurements with no source port: "R1,0"
– Banded: Disable unsupported applications

Issues Resolved

– Gain Compression: Fixes for the GCA phase feature
– Noise Figure: Fixed issue where sometimes interpolation was disallowed
– Vector Mixer Calibration: Allow mixer characterization for non-overlapping calkit frequencies
– Markers: Fix positive phase format in markers
– Numpad improvement for dBm units: Improved Up/Down behavior

A.14.80.08 Version Information

Compilation Date:	10 May 2021
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A148008.exe

Enhancements

– New feature: Added IF BW Gaussian Shape option to PNA
– New feature: Added option to find compression based on phase (Gain Compression)
– New feature: Enabled 20 MHz reference output on DDS (Version 7) synthesizer models
– Calibration: During a guided power cal, allow "Force de-embed power sensor adapter" on all channels even when connector type is matching
– Calibration: improve handling of power offsets – especially when they are different between cal all channel and client channel
– Calibration: During calibration with multiple Power sensors, added annotation when de-embedding power sensors

Issues Resolved

– True Mode Stimulus fix for x-axis sweep annotation during phase sweep
– Balanced Measurements: Fix creation of balanced measurement ratios
– Simulator: Enable an emulated power sensor by default
– Spectrum Analyzer: Various fixes
– Gain Compression: Enable the correction types dialog
– Active Parameters: Fix crash when saving .xnp file
– Differential I/Q: Fix issues when using a 2 port PNA with Differential I/Q application
– Smoothing: Fix smoothing of unwrapped phase
– External Device Dialog: Fix rare race condition when using external devices that would cause the Long Operation Dialog to show up unnecessarily
– Fixturing dialog: various updates. Removed unnecessary extrapolation warning
– Fixturing dialog: added real time updates so that changes to the fixture are represented immediately in the channel
– Fixturing: Some fixes to applying fixtures to converter classes
– Fixturing: Improve the error reporting when loading an invalid SnP file
– Correction: Preserve the correction state in application channels when saving and recalling a state
– IMSpectrum: Fix crash when leveling on the output power
– Interface Control: Fix bug with Interface Control and VISA device control after Preset

A.14.80.03 Version Information

Compilation Date:	02 Apr 2021
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A148003.exe

Issues Resolved

- Fixed: Correction Engine Not Initialized error message when balanced measurements are added

A.14.80.02 Version Information

Compilation Date:	12 Mar 2021
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A148002.exe

Enhancements

- New Feature: Enhanced fixture simulator GUI
- New Feature: Simulator (Option S94050B and S94051B)
- New Feature: Modulation distortion: LO Feedthru monitor
- New Feature: Phase Noise: Residual Noise
- New Feature: Arbitrary Waveform Generator on XSB port (S93072B)
- New Feature: Support P9336a + PSG external driver
- New Feature: Active Parameter – Save DC Meter measurements
- New Feature: Added support for Keysight X/P/K/R/Q/U/V/W11644A Waveguide Cal Kits with S93015B Real-time Uncertainty software

Issues Resolved

- Calibration: Fix setting of thru type for Cal All
- Calibration: Improve message when storing new cal into existing calset
- Differential IQ: Various fixes
- Gain Compression: Fix use of LFE frequencies
- Modulation Distortion: Various fixes
- Phase Control: Various fixes
- Recall: Improve recall speed
- Receiver leveling: For point leveling, settle the power level at the low power level after the sweep is complete
- Trace Analysis: Trace statistics and marker search dialog improvements

A.14.60.11 Version Information

Compilation Date:	25 Feb 2021
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A146011.exe

Issues Resolved

- DIQ: Fixed crash when creating DIQ channels
- DIQ: Fixed crash when setting Phase Control parameters
- Fixed crash when XSB is being controlled in Phase Sweep/Receiver Leveling

A.14.60.10 Version Information

Compilation Date:	06 Feb 2021
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A146010.exe

Enhancements

- New Feature: Support for USB Noise Source
- New Feature: Connecting with PathWave Vector Signal Analysis (89600 VSA)
- New Feature: Edit Multitone Modulated Waveform

Issues Resolved

- Balanced Measurements: Fix issue with uncorrected balanced measurements
- Calibration: Fix warning when recalling state file with channel outside of calset frequency range
- Calibration: Fix issue with error "independent calibration channels is not valid"
- Calibration: Add warning to Cal All if the Offsets do not match the cal all settings
- Calibration: Add new SCPI command to control the sweep state during a calibration
- Calibration: Fix SENS:CORR:CSET:CRE:DEF when using "EnhancedResponse"
- Calibration: Fix averaging of response corrected "b2,1"
- Calibration: Remove unnecessary delta when recalling legacy state files
- Calibration: Fix issue where the measurement would go to -200 dB when turning correction ON/OFF
- Differential IQ: Fix issue with match measurements for external source
- Differential IQ: Fix use of Port 2 when Source2 is routed through Port 2
- File Save Dialog: Fix case where the filename is truncated to 64 characters
- Gain Compression: Fix issue with recalling old calibrated gain compression state files
- Markers: Improve ability to drag markers when using x-axis point spacing or log sweep
- Markers: Fix case where the marker search dialog shows the wrong settings after marker number has changed
- Modulation Distortion on converters: Fix issues with embedded LO feature
- Fixturing: Fix bug with extrapolation of fixture s2p files
- Fixturing: Re-enable support for deembedding s2p files where S12 = 0
- Noise Figure: Fix issue when using power compensation and noise figure
- Noise Figure for Converters: Improve accuracy of the Embedded LO feature
- Time Domain: Add explicit feature for turning off the limiting of start/stop times to avoid aliasing. Feature is available in advanced tab
- Phase Noise: Various fixes
- Phase Sweep: Various fixes

- Phase Reference Calibration: Fix issue when used with preference: " Cal: For frequency offset, use primary frequencies"
- Receiver Attenuators: Fix issue with using receiver attenuator for "A" with the combined source through Port 1
- Scalar Mixer Converter: Fix min & max hold traces on SMC+Phase traces
- Spectrum Analyzer: Added LO feed-thru calibration enhancement
- Spectrum Analyzer: Choose the appropriate IFBW when using receiver leveling in the SA channel
- Spectrum Analyzer: Fix crash when recalling certain legacy state files
- True Mode Stimulus: Fix when routing the second source through Port 2

A.14.60.06 Version Information

Compilation Date:	08 Jan 2021
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A146006.exe

Issues Resolved

- Receiver Leveling: Fix reporting errors when out of tolerance
- Receiver Leveling: Fixing point leveling at LFE frequencies
- Active Parameter: Numerous fixes
- Formatting: Fix issue where volt measurements would show negative results
- Direct Digital Synthesizer (DDS): Allow save and recall between instruments with different XSB option
- Differential IQ: Fix use of Port 2 using the second source
- IMD: Fix for IMD tone equalization when using pulse

A.14.60.02 Version Information

Compilation Date:	10 Dec 2020
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A146002.exe

Enhancements

- New feature: Multiline TRL Calibration
- New feature: Support for P9336A USB I/Q Arbitrary Waveform Generator

Issues Resolved

- SnP Files: Fix issue where SParameter names was not included in the file
- SnP Files: Add support for recalling S2P files with CW frequency
- Comb Generator: Add SCPI commands for controlling U9391X comb generator: CONT:PHAS:XXX
- Calset viewer: fix issue where fixture is not included in the error terms for the displayed calset
- Calibration: Fix selection of ecal ports when auto-orientation is turned off
- Power Sensors: Fix issue with frequency checking of the power sensor
- SCPI command Fix "CALC:DATA? RDATA"
- SCPI command Fix "CALC:CORR:TYPE"
- SCPI command Fix "STAT:QUES:INT:HARD:COND?"
- Balanced Parameters: Fix recall of balanced parameters from A.13.95 and older branches
- IMD: Resolve IMD issue with fixturing by enabling extrapolation of s2p files
- Modulation Distortion: Fix "SOUR:POW:ATT" command
- Gain Compression Application: Fix crash when using fixturing without user correction
- Active Parameters: Fix power offset
- Noise Figure for converters with Embedded LO: Fixed triggering
- Port Extensions: Add support for negative port extensions
- Modulation Distortion: Fix: SOUR:MOD:CORR:COLL:ACQ_STAT?
- Recall: Fix some crashes when recalling state files on the wrong hardware
- Recall: Fix crash when recalling some very old legacy files with "response correction" selected
- Recall: Fix global source recall issues
- Fast CW: Fix bad data when using fast groups and point sweep
- SA: speed improvement – default SA sweep is about 20% faster
- SA: Enable Coherent averaging on all PNAs
- Scalar Mixer Converter: Fix issues with LFE region (below 10 MHz)

A.14.40.08 Version Information

Compilation Date:	04 Nov 2020

Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A144008.exe

Issues Resolved

- – Differential IQ: Fix issues with adding new parameters and averaging
- – Fixturing: Fix issue when enabling fixturing on receiver only traces with no cal
- – Spectrum Analyzer: Fix issue where RF power would not turn ON

A.14.40.04 Version Information

Compilation Date:	13 Oct 2020
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A144004.exe

Enhancements

- New feature: Phase Noise application (option S930317B)
- New feature: Global Source
- New enhancement for modulation distortion: Power Sweep and LO Feedthru Calibration
- New enhancements for TMSA
- New source drivers for External Compound Sources
- Direct Digital Synthesizer (DDS): Support to persist the external reference settings

Issues Resolved

- PNA-L: Fix crash with delta match cal when no global delta match cal exists
- Fix SCPI command: CSET:FIXTure:DEEMbed to work with multiple calibrations in one channel
- Group Delay aperture fixes

A.14.20.04 Version Information

Compilation Date:	23 Sep 2020
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64-bit
File Name:	VNA_x64_A142004.exe

Issues Resolved

- Parameters: Fix for case sensitivity issue with arbitrary receiver ratios
- Correction: Fix for correction of unratioed receiver terms
- Noise Figure: Fix for unknown thru calibration
- Performance: Improved performance when using large point counts with display ON
- Remote Programming: Enable remote lockout as an option, when a new preference is set
- SMC+Phase: Fix for case where phase reference calibration would not start without an error
- SMC+Phase: Fix electrical delay calculation on a high side LO mixer
- SMC+Phase: Fix for incorrect phase spike at some points when performing a reverse sweep
- SnP files: Fix loading SnP files with international characters in their titles
- Gain Compression Application (GCA): Re-enable enhanced response correction
- Gain Compression Application (GCA): Properly disallow phase reference as an option during calibration
- Gain Compression Application (GCA): Fix issue where analysis would show 0 dBm to 0 dBm on the x-axis
- N5264B: Fix for crash when using external sources on N5264B
- N523XB Models: Fix crash for some calibration scenarios on units that use a global delta match calibration
- IMD: Fix receiver leveling issue
- Receiver Leveling: Improve behavior when receiver leveling on the combiner path
- True Mode Stimulus Application (TMSA): Crash fix
- True Mode Stimulus Application (TMSA): Add support for aux input measurements

A.14.00.23 Version Information

Compilation Date:	06 Nov 2020
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64–bit
File Name:	VNA_x64_A140023.exe

A.14.00.23 is the Production Release.

All shipping PNAs will contain this version until the next Production Release.

Issues Resolved

– Service routine-SourceAdjust: Updated driving data (max power target) for N5247B and enhancements (all models)

– Service routine–Default EE: Updated driving data

A.14.00.19 Version Information

Compilation Date:	10 Sep 2020
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	64–bit
File Name:	VNA_x64_A140019.exe

Note: With A.14.00.00 and above, the N5260A test set functionality has been removed.

Enhancements

– Direct Digital Synthesizer (DDS): Option UNY Enhanced Phase Noise

– Direct Digital Synthesizer (DDS): Option XSB 3rd RF source"

– Direct Digital Synthesizer (DDS): Support for 100 MHz Frequency Reference

– Point receiver leveling mode

– Up to 500 Windows

– Up to 100 Traces per Window

– Enhancements to Correction Methods

– Enhancements to Balanced Setup

– True Mode Stimulus Application (TMSA) enhancements and improved performance

A.13.95.09 Version Information

Compilation Date:	24 Jul 2020
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A139509.exe

Enhancements

- Manual Trigger: Improve performance for some circumstances when using manual point trigger
- Point Sweep: Fix manual trigger with point sweep
- Power Sensor: Fix "undefined header error" that would occur when using power sensors with serial number including "442"
- Display: Fix issue with moving markers on Smith Chart
- Display: Fix crash when using autoscale after recalling some older versions of state files
- Fix crash when saving s2p file while using trace hold
- Fix copy channel with a compression marker
- DC Meter: Add support for negative V or A readings from supported DC meters
- Fix path configuration setting: "Source 2 Out 2" for "Port 2"
- High security mode: Blank frequency in the 2 port de-embedding dialog
- High security mode: Blank frequency in SA source settings
- Fix issue affecting IVCAD software
- Local/Remote: Added preference to put PNA into remote mode when handling SCPI commands
- DMX: Updated DMX Lite application
- Real time uncertainty: updated 85059B calkit and added support for Keysight N4692 ECal
- Gain Compression: Fix intermittent crash when using an external DC meter to read at compression
- Gain Compression: Fix crash when changing number of power points with 2D compression
- Noise Figure: Fix certain unknown thru calibrations
- Differential IQ: Fix various GUI bugs
- TDR: Fix UI features missing when leaving TDR application
- Scalar Mixer Measurements: Fix use of the power table calibration when using SMC with a N5292A controller
- Phase Reference Cal: Fix issue preventing the use of older phase reference calibrations
- Vector Mixer Measurement: Updated to set power on both ports when using an internal source for the reference mixer
- Spectrum Analyzer: Fix crash when recalling an instrument state with a source that is no longer connected
- Spectrum Analyzer: Improve power correction when using N5292A controller
- True Mode Stimulus Application (TMSA): Fix copy channel
- True Mode Stimulus Application (TMSA): Fix power setting on port 2

A.13.95.07 Version Information

Compilation Date:	11 May 2020
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A139507.exe

Issues Resolved

- Fixed defect where "Save screen" does not include ripple test result
- Fixed crash at startup when using banded mode
- Modulation Distortion – Allow spans smaller than 10 MHz
- Modulation Distortion – Fix crash when loading a state file with an invalid source
- Spectrum Analyzer – Fix error report: "The requested feature is not available..." when pressing the sweep button with an AUX source ON
- Spectrum Analyzer – Enable embedded LO feature when option 084 is present
- Spectrum Analyzer – For modulation signal generation: No longer default to "signal optimizer" for flat tones type
- Spectrum Analyzer – During modulation correction, added warning if using a receiver that is not already measured in SA
- Spectrum Analyzer – Fix error with band power markers

A.13.95.06 Version Information

Compilation Date:	27 Apr 2020
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A139506.exe

Enhancements

– New Feature: Modulation Distortion on Converters (with or without embedded LO)
– New Feature: AM/PM Distortion Analysis
– New Feature: Trace Deviation from linear (or parabolic, or cubic)

Issues Resolved

– SA and Modulation Distortion: Various bug fixes
– Modulation Distortion: Various fixes
– NFX, GCX, IMDX: enable additional 2 stage mixer configuration modes
– Fixed crash when loading .s2p files with noise parameter data
– Noise Figure: Fix for display of memory trace for GammaOpt
– Cal All – fixed issue with independent power cals
– Differential IQ – re-enable embedded LO feature
– SNP Files – fixed issue with saving .s2p files with power sweep

A.13.80.12 Version Information

Compilation Date:	02 Feb 2020
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A138012.exe

Issues Resolved

- Fixed intermittent error when performing calibration, especially with very large numbers of points
- Fixed several SA and Modulation Distortion bugs
- Fixed bug in SMC where output port selection was disabled
- For N5264B systems, modified behavior of SENS:FOM:RANG and SENS:FOM:RNUM? for backwards compatibility
- Fixed issue where flattened noise figure calsets could not be applied
- Fixed *OPT?, so that it no longer returns 025 twice
- Licensing: Fix USB dongle licenses
- Noise Figure: Fix for display of memory trace for GammaOpt
- Fixed Cal All issue where the user couldn't override the thru connections
- Fixed crash when recalling a state file with high security mode
- For SMC+Phase, fixed bug where the normalization point would sometimes not be at 0 degrees
- New FPGA 54.28 with improved timing
- Add "VXG" to the list of supported external sources

A.13.80.07 Version Information

Compilation Date:	24 Oct 2019
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A138007.exe

Issues Resolved

– Fixed intermittent crashes on State Recall for states involving GCX channels and DC sources

– Fixed crash on VNAParser in certain cases

– Fixed several SA and Modulation Distortion bugs

– Fixed NF calibration in CW mode

– Fixed NF narrowband correction first-point issue (in hold mode)

– Fixed Power calibration out-of-tolerance fails to warn user when requested

– Fixed Crash when using mag or phase offset on N5264B

– Fixed N5264B source power calibration bug

– Modulation Distortion features: Improved calculation of Equalized EVM, Swept Cal Power and Linear S21 Sweep

– Cal All Independent Calibration channels: Clients can now opt-in to doing their own Smart Cal during CalAll

– Additional FW Support for ECals: N4433D options 0DC and 003, N4432D options 0DC and 003, N4431D options 010,020,030 and 040

– New FPGA 54.28 with improved timing

– Several additional bug fixes

A.13.65.03 Version Information

Compilation Date:	27 Jun 2019
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A136503.exe

Issues Resolved

- Fixed LO unlevel error when using more than 1 modulation distortion channel
- Fixed issue with ACP cal where upper side was 10 dB higher than lower side ACP
- Fixed crash when recalling specific state file using Swept IMD
- IMSpectrum: Remove unused advanced button
- Differential I/Q: Fixed crash when leveling external source
- Fixed hardware triggering with UXG
- Modulation Distortion: Added support for N5192A

A.13.60.06 Version Information

Compilation Date:	22 May 2019
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A136006.exe

Enhancements

- Now supports Modulation Distortion application (S9307xB)
- Now supports DUT centric measurement configuration assistant (Device Expert)
- Now supports Asset Advisor (keeps track of mechanical attenuator/switch changes)
- Uncertainty Calculator now supports Low Frequency Extension

Issues Resolved

- Several different TDR and Enhanced TDR bugs fixed
- N5290A/91A 64GHz spur fixed

A.13.55.06 Version Information

Compilation Date:	22 Apr 2019
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A135506.exe

Issues Resolved

- Fixed: Phase smoothing bug that was not quite fixed in previous firmware
- Fixed: iTMSA Channel can't be copied if no correction

A.13.55.04 Version Information

Compilation Date:	05 Apr 2019
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A135504.exe

Issues Resolved

- Fixed multiport Cal related defect
- Fixed: Issue with CalPod as ECal on A.13.55.01
- Fixed: Hardware errors are not reported in SCPI error queue when expected.
- Fixed: Several issues with Noise Figure power meter calibrations, mostly in CalAll
- Fixed: Offset when measuring NF using low gain stage
- Fixed: Cal Kit Editor crash when attempting to edit an unknown thru cal standard that was dynamically created by calibration
- Fixed: Phase smoothing bug that made B model results different from A models
- Fixed issue with Power Cal compatibility and WinCal

A.13.55.01 Version Information

Compilation Date:	15 Feb 2019
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A135501.exe

Enhancements

– Adds support for the Maury Noise Tuner Application (Opt 027)

Issues Resolved

– Fixed TDR issue found in A.13.50.07

– Fixed: Power meter locks up occasionally on B-model PNA

– Fixed: TMSA not working for BAL-SE or SE-BAL cases

– Fixed: Crash in power meter NF cal if steps not done in order

– Fixed: DisplayLimit throws runtime error when encountering an uninitialized variable

– and many more bugs fixed

A.13.50.09 Version Information

Compilation Date:	23 Jan 2019
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A135009.exe

Issues Resolved

- – Fixed Src Adj bug
- – Fix source power cal associated with turning on a calset
- – Fixed: Trace Max Hold sometimes crashes the application
- – and more

A.13.30.09 Version Information

Compilation Date:	17 Oct 2018
Operating System:	Windows 10 and Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A133009.exe

Enhancements

- – First version that supports Windows 10; also usable on Windows 7

A.13.25.04 Version Information

Compilation Date:	18 Jul 2018
Operating System:	Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A132504.exe

Enhancements

– First version that supports Option 110/111 (Active Hot Parameters)
– First version that supports Calpod B for B models
– 1-Port balanced measurements for iTMSA
– Support for external DC meter for SA channel measurements
– Support for VDI PM5 power meter

Issues Resolved

– TDR: Fixed: DUT length calculation takes too long on some models
– Fixed: Backwards compatibility for "SENS:"CORR:COLL:ACQ" command where user specifies ECal and omits 2nd argument
– Fixed: Multiport calibrations ignore user-requested thru path selections
– Fixed: CalPod: PNA-X crash when using CALALL and Calpods with ALC Downconverter DUT
– Fixed: Firmware freezes when CALC:PAR:MNUM:SEL 2; SENS:TDR:SWE:SING is sent
– Fixed: TDR: TDR Preset doesn't work after DLC + auto DUT Length
– Fixed: TDR: Save/Recall fails in 2-port PNA with DIFF1 setting
– Fixed: mmWave application does not save/recall properly

A.13.20.10 Version Information

Compilation Date:	30 Apr 2018
Operating System:	Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A.13.20.10.exe

Enhancements

- First version that supports Option 011 (TDR)

Issues Resolved

- Attenuators (opt 219 or 419) are now recognized again on N5227B

A.12.85.08 Version Information

Compilation Date:	01 Dec 2017
Operating System:	Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A.12.85.08.exe

Known Faults

- Attenuators (opt 219 or 419) are not recognized on N5227B. Do NOT use on N5227B, wait for A.13.20.xx

Issues Resolved

- Fixed: Correction is applied incorrectly when using receiver leveling with SA
- Fixed bug where first sweep after a recall is bad (when using receiver leveling in SA)
- Fixed: *ESE defaults to 0 but should default to 255. This breaks backwards compatibility for *STB?
- Many merged fixes; mostly involving SA mode

A.12.85.04 Version Information

Compilation Date:	06 Nov 2017
Operating System:	Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A.12.85.04.exe

Known Faults

– Receiver leveling in Spectrum Analyzer is not working
– *ESE is initialized to 0. Customers must set *ESE to 255 before using *ESR? to poll for completion of an overlapped command

Issues Resolved

– Fixed: Option 028 noise figure with receiver attenuator issue
– Fixed: Assorted issues with Option 008 pulse application
– Fixed: Assorted issues with SMU devices
– Fixed: "Channel not found" error when using Cal All with Phase Reference
– Fixed: Response + Isolation cal
– Fixed: GCA aux receiver
– Fixed: Banded dialog issues
– Added GUI for R1 Loop control on non PNA-Xs
– Improved support for UXG as a source
– Significant SA application fixes
– Fixed: DiffIQ with receiver leveling
– Fixed: crash when using an ECal with a corrupted user configuration
– GUI menu change: "most recently used" file list is not clipped anymore
– GUI menu change: "normalize" menu item added
– SCPI: Fixed numerous SCPI commands to ensure backwards compatibility with A models

A.12.80.07 Version Information

Compilation Date:	29 Jun 2017
Operating System:	Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A.12.80.07.exe

Enhancements

– First web release for "B" models

A.12.70.06 Version Information

Compilation Date:	26 Jun 2017
Operating System:	Windows 7
Requirements/Restrictions:	None
Application Type:	32-bit
File Name:	VNA_A.12.70.06.exe

Enhancements

– First released version of firmware for the "B" model PNAs.
 The B models have a 12.4-inch display and are dark grey in color.
 This firmware, and the ones listed above, will not work on "A" models